ANTICARCINOGENIC EFFECT OF COCOA (*Theobroma cacao* L.) IN MCF-7 BREAST CANCER CELLS

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INTRODUCTION: Breast cancer is one of the most prevalent and deadly malignancies among women worldwide. Its high incidence and mortality rate pose a significant public health challenge. Despite advances in diagnosis and therapy, resistance to treatment, especially hormone therapy and chemotherapy, remains a major obstacle to effective clinical outcomes. In this context, the search for alternative or complementary therapeutic strategies is essential. Natural products have gained attention due to their structural diversity and bioactive potential. Several plant-based compounds, such as curcumin and resveratrol, have demonstrated anticarcinogenic activity in breast cancer through modulation of oxidative stress, cell proliferation, and apoptosis. Cocoa (*Theobroma cacao* L.), widely consumed as a food, is rich in flavonoids such as catechin, epicatechin, and procyanidins, which exhibit potent antioxidant, anti-inflammatory, and antiproliferative properties. These effects may contribute to its potential as an adjuvant in the prevention and treatment of breast cancer. **OBJECTIVE:** To evaluate the anticarcinogenic effect of cocoa on MCF-7 breast cancer cells. **MATERIALS AND METHODS:** MCF-7 cells were plated at concentrations of 5×10^4 and 2×10^4 cells/well and incubated with cocoa extract at concentrations of 30, 100, 250, 500, 750 and 1000 µg/mL for 24 and 72 hours. After incubation, cell viability was assessed using the MTT assay. **RESULTS AND CONCLUSION:** The results indicated that the higher concentration of cocoa extract (1000 µg/mL) significantly reduced the proliferation parameters, i.e., it demonstrated an anticarcinogenic effect on MCF-7 cells. Therefore, it is possible to conclude that cocoa has anticarcinogenic activity in this cell line, and further studies should be conducted to explore its potential as a new adjuvant therapy for breast cancer.

Keywords: cocoa; breast cancer; flavonoids; antioxidant; experimental toxicology.